

**Notice of Allowability**

Application No.

10/801,836

Examiner

Shawn Riley

Applicant(s)

MATSUURA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to march 2004 filing.
2. ☒ The allowed claim(s) is/are 1-53.
3. ☒ The drawings filed on March 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 6-17-04
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
**SHAWN RILEY**  
**PRIMARY EXAMINER**

## **DETAILED ACTION**

### **Reasons for Allowance**

1. The following is an examiner's statement of reasons for allowance:
2. No prior art uncovered anticipates or renders obvious applicant(s) claimed switching power supply controller including a high-pass filter for cutting off a low-frequency component included in a signal corresponding to a duty ratio of the drive signal; integrating means for integrating a signal resulting from the cutoff of the low-frequency component by the high-pass filter; difference calculating means for calculating a difference between a signal indicating a difference between an output voltage of the switching power supply and a target voltage for the output voltage, and a signal resulting from the integration by the integrating means; and drive signal generating means for generating the drive signal, based on a signal resulting from the calculation by the difference calculating means, and a ramp signal.
3. Further, no prior art uncovered anticipates or renders obvious applicant(s) claimed switching power supply controller including a high-pass filter function and an integrating function; difference calculating means for calculating a difference between a signal indicating a difference between an output voltage of the switching power supply and a target voltage for the output voltage, and a signal resulting from the operation by the operation means; and drive signal generating means for generating the drive signal on the basis of a signal resulting from the calculation by the difference calculating means, and a ramp signal.
4. Further, no prior art uncovered anticipates or renders obvious applicant(s) claimed switching power supply controller including first high-pass filter for cutting off a low-frequency component included in a signal corresponding to a duty ratio of the drive signal; integrating

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means for integrating a signal resulting from the cutoff of the low-frequency component by the first high-pass filter; a second high-pass filter for cutting off a low-frequency component included in a signal resulting from the integration by the integrating means; difference calculating means for calculating a difference between a signal indicating a difference between an output voltage of the switching power supply and a target voltage for the output voltage, and a signal resulting from the cutoff of the low-frequency component by the second high-pass filter; and drive signal generating means for generating the drive signal on the basis of a signal resulting from the calculation by the difference calculating means, and a ramp signal.

5. Further, no prior art uncovered anticipates or renders obvious applicant(s) claimed switching power supply controller including a high-pass filter for cutting off a low-frequency component included in a signal corresponding to a duty ratio of the drive signal; integrating means for integrating a signal resulting from the cutoff of the low-frequency component by the high-pass filter; averaging means for obtaining an average of said duty ratio on the basis of the signal corresponding to the duty ratio of the drive signal; gain adjustment value calculating means for calculating a gain adjustment value on the basis of a signal corresponding to the average duty ratio obtained by the averaging means, and a signal indicating a target voltage for an output voltage in the switching power supply; multiplying means for multiplying a signal indicating a difference between the output voltage of the switching power supply and the target voltage, by the gain adjustment value calculated by the gain adjustment value calculating means; adding means for adding up a signal resulting from the multiplication by the multiplying means, the signal corresponding to the average duty ratio obtained by the averaging means, and a signal resulting from the integration by the integrating means; and drive signal generating means for

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generating the drive signal on the basis of a signal resulting from the addition by the adding means, and a ramp signal.

6. Further, no prior art uncovered anticipates or renders obvious applicant(s) claimed switching power supply controller including a high-pass filter function and an integrating function; averaging means for obtaining an average of the duty ratio on the basis of the signal corresponding to the duty ratio of the drive signal; gain adjustment value calculating means for calculating a gain adjustment value on the basis of a signal corresponding to the average duty ratio obtained by the averaging means, and a signal indicating a target voltage for an output voltage in the switching power supply; multiplying means for multiplying a signal indicating a difference between the output voltage of the switching power supply and the target voltage, by the gain adjustment value calculated by the gain adjustment value calculating means; adding means for adding up a signal resulting from the multiplication by the multiplying means, the signal corresponding to the average duty ratio obtained by the averaging means, and a signal resulting from the operation by the operation means; and drive signal generating means for generating the drive signal on the basis of a signal resulting from the addition by the adding means, and a ramp signal.

7. Further, no prior art uncovered anticipates or renders obvious applicant(s) claimed switching power supply controller including integrating means for integrating a signal resulting from the cutoff of the low-frequency component by the first high-pass filter; a second high-pass filter for cutting off a low-frequency component included in a signal resulting from the integration by the integrating means; averaging means for obtaining an average of said duty ratio on the basis of the signal corresponding to the duty ratio of the drive signal; gain adjustment

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value calculating means for calculating a gain adjustment value on the basis of a signal corresponding to the average duty ratio obtained by the averaging means, and a signal indicating a target voltage for an output voltage in the switching power supply; multiplying means for multiplying a signal indicating a difference between the output voltage of the switching power supply and the target voltage, by the gain adjustment value calculated by the gain adjustment value calculating means; adding means for adding up a signal resulting from the multiplication by the multiplying means, the signal corresponding to the average duty ratio obtained by the averaging means, and a signal resulting from the cutoff of the low-frequency component by the second high-pass filter; and drive signal generating means for generating the drive signal on the basis of a signal resulting from the addition by the adding means, and a ramp signal.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Allowable Subject Matter***

1. Claims 1-53 are allowable over the prior art of record.

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### *Conclusion*

Any inquiry from other than the applicant/attorney of record concerning this communication or earlier communications from the Examiner should be directed to the Patent Electronic Business Center (EBC) at 1.866.217.9197. Any inquiry from a member of the press concerning this communication or earlier communications from the Examiner or the application should be directed to the Office of Public Affairs at 703.305.8341. Any inquiry from the applicant or an attorney of record concerning this communication or earlier communications from the Examiner should be directed to Examiner Riley whose telephone number is 571.272.2083. The Examiner can normally be reached Monday through Thursday from 7:30-6:00 p.m. Eastern Standard Time. The Examiner's Supervisor is Mike Sherry who can be reached at 571.272.2084. Any inquiry about a case's location, retrieval of a case, or receipt of an amendment into a case or information regarding sent correspondence to a case **should be directed to 2800's Customer Service Center** at 571.272.2815. Any papers to be sent by fax MUST BE sent to fax number 703.872.9306. Any inquiry of a general nature of this application should be **directed to the Group receptionist** whose telephone number is 571.272.2800. Status information of cases may be found at <http://pair-direct.uspto.gov> wherein unpublished application information is found through private PAIR and published application information is found through public PAIR. Further help on using the PAIR system is available at 1.866.217.9197 (Electronic Business Center).

May 05

  
**Shawn Riley**  
**Primary Examiner**